



CASE STUDY

JETTY LOADING ARM CAPACITY ASSESSMENT

CLIENT: CONFIDENTIAL

LOCATION: UK

HIGHLIGHTS

- Structural assurance
- Geotechnical modelling
- Targeted strengthening

THE CHALLENGE

Arthian was commissioned to assess an existing operational fuel transfer jetty to support our client's requirement to replace their existing marine loading arms. Following a significant change in use of the jetty and site operations, the proposed loading arms significantly increased the loading and location on the existing reinforced concrete jetty head.

The jetty was an ageing marine structure supported on deep steel tubular piles, with varying geometry and limited historical records.



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THE SOLUTION

Given the magnitude of change, Arthian delivered a combined structural and geotechnical assessment of the jetty head. This started with appropriate inspection, desk study and development of an agreed Basis of Design statement. Our structural team then modelled the jetty head using appropriate structural modelling techniques, and assessed it's performance in line with appropriate maritime and design codes. In parallel, it was evident that a geotechnical assessment of the outer steel tubular piles was needed. An appropriate ground model was developed to allow structural and geotechnical assessments.

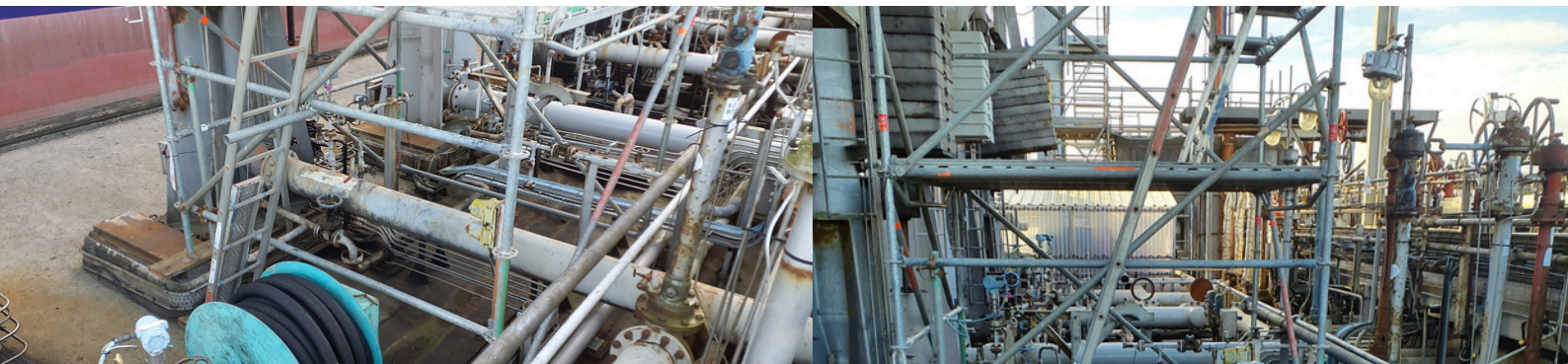
Our output including supporting the client with targeted recommendations to reduce assessment risk, and pragmatic design recommendations around new holding down bolts and plinth repairs. The loading arms were then successfully installed and remain operational.

Key Outcomes:

- Pragmatic, targeted gathering of data on existing, aged jetty head structure
- Appropriate structural and geotechnical assessment
- Practical risk mitigation measures
- Confirmation of structural and geotechnical jetty head capacities
- Supported safe progression of the loading arm replacement

Project Insight

A robust, evidence-led approach allowed Arthian to provide clear engineering assurance and practical recommendations despite limited asset records and data.



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